



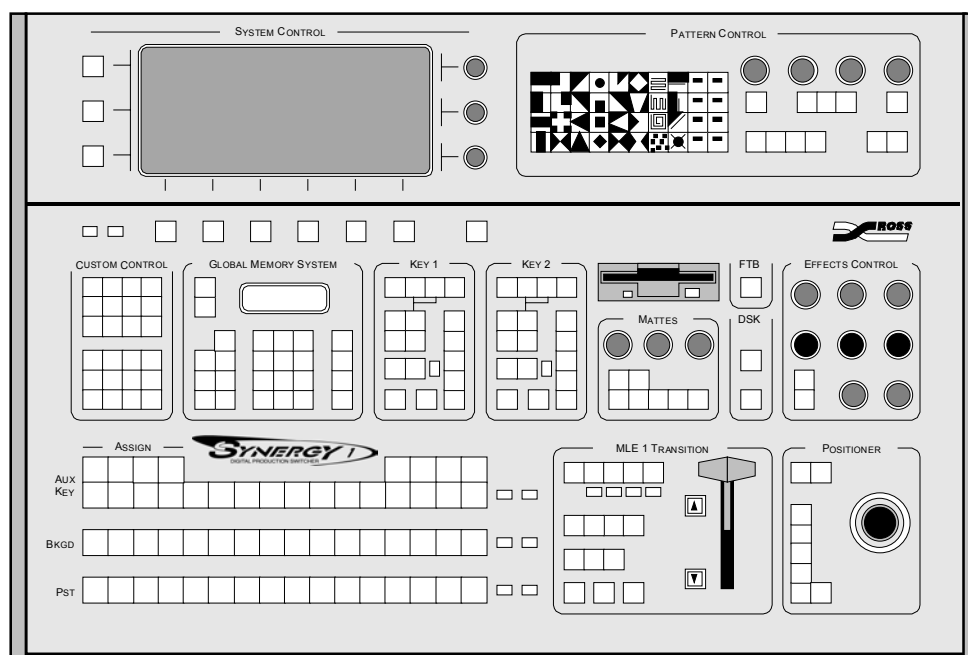
ORDERING GUIDE



Ross Video Incorporated, P.O. Box 880, Ogdensburg, New York, USA 13669 0880
Ross Video Limited, P.O. Box 220, 8 John St., Iroquois, ON., Canada K0E 1K0

Tel. (613) 652-4886
Fax. (613) 652-4425

www.rossvideo.com



Synergy 1 Control Panel

Product Overview

Thank you for considering the purchase of a Synergy SD Digital Production Switcher. Ross Video has designed and manufactured production switchers for over thirty years. We hope that you join the many thousands of satisfied video professionals around the world that are proud owners of Ross Production Switchers. Ross has been known for innovation in production switcher technology and has had many industry firsts including such patented technology as Soft Edge Borders and Transition Preview, which have become industry standard features. As you read through this Ordering Guide, you will discover that Ross has again broken new ground with our Synergy SD Series...

Designed for Live!

Ross Video developed the Synergy series of digital production switchers for live news, live sports, and live production. Because the switcher is the center of the action, it is important that it be powerful and versatile yet maintain its ease of operation. This frees the operator to concentrate on the programming instead of the equipment.

Designed for DTV!

Synergy is the only production switcher that can truly handle dual aspect ratio production. In the transition period to DTV, there is a need for dual aspect ratio production. The Synergy 1 includes, as an option, an internal aspect ratio converter (Aspectizer®). Since the Aspectizer is internal and integrated with the Synergy control system, simultaneous dual aspect production is enabled. Both 16:9 and 4:3 programs can be put together with your existing crew at the same time!

Designed to be HDTV Upgradeable!

Ross provides an HDTV upgrade path for our Synergy customers. It is possible to upgrade all existing Synergy Series SD digital production switchers to HDTV simply by exchanging



the rack frame electronics. Ask your Ross sales representative for details on this unique program.

Designed for You!

The Synergy Series, our fourth generation of switchers, was designed with the direct input of video professionals experienced in news, sports, and mobile production. Key members of the Synergy design team are part of an ongoing program where they provide switcher demonstrations, assist with switcher installation, and train operators. As a result, the Synergy line continues to advance Ross Video's tradition of easy to use and logical panel layouts.

Please do not hesitate to contact us with any questions or comments you have related to this Ordering Guide at Tel: +1-613-652-4886, Fax: +1-613-652-4425 or email: solutions@rossvideo.com

Product Highlights

- **Aspectizer®.** Ideal for DTV requirements, the Aspectizer is an internal aspect ratio converter that makes Synergy capable of handling simultaneous dual aspect ratio production. It allows conversion from 4:3 to 16:9, 16:9 to 4:3, and now with version 2, six of the Aspectizer looks can be moved horizontally or vertically to provide even more real estate on the screen for added flexibility. Any number of switcher inputs and outputs can have aspect ratio conversion and, because the Aspectizer is built in, it is tightly controlled from the Synergy 1 control panel.
- **Powerful Keyers.** The two full function keyers in the MLE have dedicated pushbuttons, flying borders for every key type, Squeeze & Tease®, chroma keying, key over transition, quick key preview, transition generators, and bicolor on-air status.
- **Dual DSKs.** The Synergy 1 has optional DSKs that can extend the keying power to an impressive total of 4 keyers (not counting the additional keyer used for external DVE transitions).
- **OverDrive™ Compatible.** The Synergy Series has evolved to control every single piece of equipment in the control room. The next step in this evolution is the revolutionary OverDrive Production Control System. With dual touch screens, the TD can now automate a production when required. Thumbnail based, the TD can step through the show's run-down or instantly break away to unscripted events. When connected to a newsroom automation system, a live MOS-based link keeps the two systems in constant and instant synch, providing clear communication between the producer and the TD.
- **Squeeze & Tease®.** A 2D DVE can be built into each MLE keyer. Every type of key can be repositioned, squeezed, and zoomed. In fact, it's possible to simultaneously crop, reposition, flip, squeeze or zoom, mask, border, and add a glowing transparent color-washed drop shadow to a key inside a *single* keyer. These options also make Squeeze & Tease wipes possible, where you can push, squeeze, tumble and swoop in keys, over-the-shoulder boxes, and backgrounds.
- **Squeeze & Tease® WARP.** A 3D DVE with over 20 WARP effects can be built into both MLE keyers. Every type of key can be squeezed or zoomed, cropped, repositioned, and rotated in 3D space. You can perform 3D key or background transitions, or build your own sequences with complex timelines, keyframe editing, and quick "shot box" sequence recall. In addition, the 3D WARP functionality opens up a new world for the creative mind. You get 2 channels of 10-bit 3D modifiable WARP effects including page turn, positionable light source, on-board still store, preprocessor effects such as defocus, mosaic, posterization, colorization, strobe, picture frame borders, object builder for slabs, timeline sequences, and lots more.
- **Chroma Keying Standard.** Synergy's standard chroma keyers feature natural and simulated shadows, spill suppression, and hue rejection.
- **Ultimatte® Insider™ Matting Device.** Award winning Ultimatte Technology on a card that plugs right into Synergy, for extra critical chroma keying requirements.

* Ultimatte is a trademark of Ultimatte Corporation.

- **Networked Still and Clip Server.** Imagine hours of video storage, virtually unlimited stills, and animations all playing out with their companion key channels. Next, combine live video and key capture with Ethernet drag and drop capability, and you have the perfect marriage of video and networkability. Even better, this solution comes bundled with Synergy's powerful Video Server Control.
- **VTR Control.** Select a VTR on the PST bus, display its current time code on the preview monitor, roll it from the transition area, and take it to air. Fast forward, rewind, and cue to time code are also available at the touch of a button on the control panel. An "Auto roll" feature ensures that any connected VTR is always rolling when you take it to air.
- **Video Server Control.** Select, play, and monitor server clips by name right from the Synergy 1 control panel. The clip menu keeps track of clips and allows instant recall and cue.
- **Audio Server Control.** Controls the DigiCart™ audio server. Dial up the desired clip and see the name and duration. Use a Custom Control macro button to link audio clips to a switcher or DVE transition.
- **Router Control.** Synergy 1 can connect to several different routers, and even several different *brands* of routers, simultaneously. Any number of the 16 inputs can be assigned as a router input, and setup is fast and easy with our router control menu.
- **Serial Tally Interface.** This option enables Serial Tally Interface using industry standard protocols to Under Monitor Display and Tally Systems.
- **Peripheral Bus II Interface.** This option provides support for Thompson GVG Peripheral Bus II Protocol for external device integration. Coordinate the store and recall of the settings of some still stores, CGs, and device controllers with the store and recall of your Synergy 1 settings.
- **Still Store (Aprisa*) Interface.** Access any still or clip on your Chyron Aprisa directly, through any of Synergy 1's serial ports.
- **Audio Mixer Interface.** There are two options available, depending on the number of inputs on your audio mixer. Large or small mixers can be controlled serially from your Synergy 1 panel, making an integrated A/V production possible.
- **Robotic Camera System Interface.** Pan, tilt, zoom, and more, directly from your Synergy 1 control panel.
- **Custom Control Macro Buttons.** 24 macro buttons (shiftable to 128) have been positioned close to the operator for powerful single touch control. Recall any combination of switcher memories, button pushes, and external device control as part of a timeline.
- **Editable Custom Controls.** Custom Control macros can now be viewed and edited directly on the switcher menu. This versatile and time saving feature displays the contents of the Custom Control and allows complete editing capabilities.

* Chyron Aprisa is a trademark of Chyron Corporation.

- **Two Pattern Generators - Standard.** The Synergy series comes standard with a primary pattern generator for wipes and PST PATT 1 and a secondary pattern generator for PST PATT 2. The primary generator comes equipped with extensive traditional, rotary, and matrix wipes.
- **Unique Preview Overlay.** This powerful feature presents VTR and video server time code, a count up/down timer, source ID, safe title, and more. They are individually selectable and put on the preview monitor for quick reference.
- **Configurable Safe Titles.** This feature (available as part of Preview Overlay) allows you to configure the SMPTE standard safe title and safe action grid on screen to fit your specific application. Up to five groups of settings may be saved.
- **External DVE Integration.** Advanced DVE effects from all popular DVEs are seamlessly integrated as switcher transitions with unmatched ease and power. Not only can a Synergy peel off backgrounds and keys, but it is unique in its ability to pre-key backgrounds and one or two keys together and then peel off the result! The process uses the MLE's third keyer and special layering hardware to make this possible. Aux Buses, tallies, and video path control are all handled automatically.
- **Remote Aux Bus Panels.** Up to 8 remote Aux panels can be added to the Synergy 1 allowing control over the 10 built-in Aux Buses from anywhere in your facility.
- **Minimal Processing Delay.** The Synergy 1 has only 1/10 line processing delay through the switcher. This is significant in reducing system timing issues.
- **Compact Size.** The Synergy 1 frame is an impressive 2 RU.
- **Growth Path.** The same video processing frame is used for our Synergy 100, GVG* 100/110 digital upgrade, and RVS-210A/216A digital upgrade. Buy a smaller system now and then upgrade to a larger control panel as your needs grow.
- **HDTV Upgrade Path.** The Synergy 1 SD can be upgraded to HDTV by exchanging the SDI electronic chassis for a Synergy MD multi-definition chassis, capable of production in either SD or HD. If an HDTV upgrade path is important to you, please ask your Ross Video representative about our written guarantee.
- **Upgrades from the Web.** Software and even some hardware can be upgraded by downloading files from our web site onto a standard floppy disk. It's fast and it's easy.
- **Affordable.** A powerful switcher at a great price!
- **Built to Last.** It's no secret that Ross products are tough. They're built to handle years of demanding, continuous use. The Synergy 1 is backed by a comprehensive **3-year transferable** warranty. The design of our fourth generation fader bars is so good, that they are guaranteed for life.

Your purchase decision must be based on a careful look at your present and future programming requirements. To ensure your investment is an informed one, and that the switcher is equipped for your programming needs, Ross Video has put together this Ordering Guide for the Synergy 1. In this guide, we describe the Synergy 1 and its many standard and optional features. As you go through the information, please feel free to call us. We will be happy to address any of your questions.

* GVG is a trademark of Thomson Multimedia.

Standard Features

Complete Control Panel

Regardless of what options are ordered, you will always receive a control panel with every button, knob, display, and light installed. This means that your Synergy 1 and your control room will look their very best - even if your budget is tight.

16 Serial Digital Inputs

The Synergy 1 switcher comes standard with 16 serial digital inputs. Any input can be assigned to any control panel pushbutton - simplifying installation. These inputs can be used as video or alpha channels. A 17th input is dedicated as a digital reference input. If an analog reference is desired, Ross Video will optionally provide external conversion to digital.

One Full MLE Effects System

Standard equipment on the Synergy 1 includes one full MLE (Multi-Level Effect) system. Two wipe generators come standard with the MLE. Both keyers in the MLE can matte fill, key invert, mask, self key, linear key, preset pattern key, and chroma key. Both keyers also offer extensive optional bordering that works with every key type. Of special note is the optional Squeeze & Tease feature allowing up to two simultaneous squeezes or zooms of any key or full screen image. The MLE also features seven comprehensive matte generators, two of which incorporate noise effects and complex mattes that far exceed traditional wash generators. Full preview is available to reduce on-air surprises.

Two Pattern Generators

There is one primary generator used for wipe transitions and PST PATT 1 and one secondary generator for PST PATT 2. The primary generator comes equipped with extensive traditional, rotary, and matrix wipes. The secondary generator provides additional traditional patterns.

Two Chroma Keyers

Chroma keying is available on both Key 1 and Key 2. The Synergy 1 is capable of putting two different chroma keys on air at the same time.

The chroma keying is of a high quality and features internal 4:4:4 chroma channel interpolation from any of the 4:2:2 inputs.

The chroma keyer provides clip, gain, hue, hue reject, and chroma suppress controls directly on the control panel. Additional chroma suppression, natural shadow insertion, and shadow transparency controls are available through the menu system.

A “chroma key memory” button is also available on the panel that instantly recalls a previously stored chroma key setup into Key 1 or Key 2.

Chroma key shadows can either be extracted from the source image or simulated using the optional switcher border generators. (Refer to option **S1-141: Dual Border Generator**).

10 Untimed Aux Buses

All ten of the Aux Buses can be used to route video to monitors, DVEs, still stores, tape machines, technical areas, etc. If any of the destinations require outputs with stable timing regardless of the source, then the option **S1-051: Timed Aux Bus** is required. Aux Buses 1 and 2 may be timed using this option.

The following signals are available on a Synergy 1 timed Aux Bus (buses 1 and 2 with timing option installed):

- Internally generated black
- Internally generated white
- All primary inputs
- DVE SEND (if purchased, used to integrate external DVE effects into switcher transitions)
- Clean feed
- MLE program output
- MLE preview output (before overlay added).

The following signals are available on a Synergy 1 untimed Aux Bus:

- Reference input (usually wired with black)
- All primary inputs
- Clean feed
- MLE program output
- MLE preview output (before overlay added).

15 Standard Digital Outputs

In addition to the 10 untimed Aux Bus outputs that come standard with the Synergy 1, many program and preview outputs also come standard:

Output Type	Quantity
PGM	2
Preview	2
Clean Feed	1
Aux Bus (one per bus)	10
Total Outputs	15

Disk Drive and System Control Area

This feature makes it possible to store and recall complete switcher setups including memory functions, switcher personalities, installation parameters and more, to a standard high density 3.5 inch floppy disk. The flexibility that this option offers can help save setup times and allows operators to store their switcher setups to their own disks.

Also included in this feature is a large crisp display that is used to configure the switcher and to provide advanced operational features.

Custom Control Macros

This feature brings the power of macros to the switcher operator. A series of button presses can be easily recorded and attached to any of 24 dedicated buttons (shiftable to 128). Step through complex show openings as easily as pressing Custom Control buttons 1, 2, then 3. Confusing timeline programming is now a thing of the past.

Custom Control buttons can also be used to control remote devices or other optional switcher features:

- Trigger a GPI to advance to the next page of your still store.
- Attach live DVE remote control commands such as go to start, run forward, and run reverse to simplify your productions.
- Play, stop, or shuttle, up to eight VTRs or Video Servers.
- Trigger a DigiCart™ audio server and tie sound effects to wipes and external DVE effects.
- Any number of pauses can be added to any macro

Custom Control macros can now be viewed and edited directly on the switcher menu.

100 Event Memory System

The Synergy 1 comes standard with storage for 100 complete switcher snapshots. They're easily stored and recalled at the touch of a single button.

All of these memories can be stored to disk providing custom tailored memories for every operator and every show.

You can even give your memories names - such as "SPORTS". The alphanumeric display will tell you what you've recalled - or what you're about to recall.

7 Matte Generators

The MLE has five simple color generators and two complex ones capable of multi-color washes. Any one of the color generators can be assigned to COLOR BKGD1 or 2, key fill 1 or 2, key border 1 or 2, or wipe pattern edges. This count does not include 6 more simple matte generators, 2 with the Squeeze & Tease options, and 4 with the Aspectizer option.

Preview Overlay

This feature makes it possible to present various types of useful information on the two main preview outputs.

This information is color-coded and can be positioned and displayed according to user preferences.

You can access the Preview Overlay feature through the switcher's menu system to control and display the following types of information:

Source Identification

Source ID is up to 8 characters and displays the name of the current background video, current preset video and transition type. An example follows: "CAM1 -W-> CHAR GEN",

indicates Camera 1 is on air and a wipe transition to Character Generator will be initiated by moving the fader handle or pressing the auto transition button.

When the **S1-065: Routing Switcher Interface** option is installed, router source names are displayed in addition to switcher source names.

VTR Time Code

If a VTR, disk recorder, Video Server, or other device using a time code is the current background of your main preview output, its current time code will be displayed (e.g., 12:59:59:23). The device's remote port must be connected to the switcher and option **S1-061: VTR Remote Control** and/or option **S1-063: Video Server Control** must also be purchased.

Configurable Safe Title and Safe Area

This places a SMPTE standard safe title and safe area indication over the main preview output that can be configured and adapted to fit your specific application. Safe title is a box that outlines the area within which the vast majority of home TV sets will be able to read text. Safe area is a box that outlines the region within which viewers should be able to follow action. Two horizontal lines inside the box indicate the minimum size that text should be to ensure that it is legible on nearly all sizes of television receivers.

Center Cross Hairs

This places cross hairs on the main preview output to indicate the center of the picture. It is useful in the alignment of text and other information.

Time Clock

This places a count down, count up, or count down then up timer on the main preview output to time commercial durations or other events. Custom Control buttons on the switcher panel can be assigned to reset, start, stop, or set the clock in addition to the menu controls. A particularly useful feature of this clock is the "auto clock" mode, which resets and starts the clock every time a transition (e.g., cut or auto transition) occurs on air. This is ideal as a show or segment timer.

Mask Preview

This places a thin outline on the main preview output around any active box mask. The AREA buttons in the effects control area determine which box mask is currently being viewed.

And more!!! The Preview Overlay works in conjunction with the chroma keyer, providing backing selection crosshairs for auto chroma keying, and also works with S&T WARP's StillStore to grab small regions of the screen.

Lots of Displays and Indicators

The Synergy 1 always lets you know what's going on. Bright red lights at the end of every bus quickly show what's on air. Yellow non-sync lights warn you that an input is untimed and might cause problems. Lights under the key transition buttons and in the keyers glow red when the key is on air or green when they are active but the MLE is not on air, as may be the case if an Aux Bus is being used downstream as a cut bus.

Every auto transition rate is constantly visible - including the main transition rates, the dedicated keyer rates, and the fade to black rate. The last memory number recalled is also displayed along with an associated eight-character memory name.

General Purpose Interface

The Synergy 1 is equipped with twelve dedicated GPI inputs and twelve dedicated GPI outputs. The GPI inputs allow the switcher to interface with peripheral equipment such as editors and DVEs. Each GPI input can be used to perform simple editing and switcher functions such as fade to black or an auto transition on the switcher's MLE. For more complex editing capabilities with the switcher, option **S1-060: Editor Interface** is available. GPIs can also be used by DVEs to indicate Aux Bus on air status to the switcher. For more complex DVE integration, refer to option **S1-062: DVE Send and Remote Control**. GPI outputs are used to trigger remote events like "Still Store Next Page" and can be tied to the switcher's Custom Control buttons.

Control Panel Tallies

The standard system includes 16 tally relays in the control panel of the Synergy 1. Tally connections are located on the rear of the Synergy 1 control panel. These connections provide a contact closure and are fully assignable - any tally can be assigned to any video input.

System Manuals

The Synergy 1 comes with a complete set of system documentation that includes an Operation Guide, an Installation Guide, and a Maintenance Guide.

10 Meter Control Cable

The Synergy 1 control panel and rack frame are connected by a single, standard 8-pin flat-shielded Telco cable that uses RS-422 communication. The maximum cable length between the control panel and its rack frame is 1,000 feet or 305 meters.

Standard System

Note

When ordering, please specify the Ross Part Number listed with the option description.

Synergy 1 S1-001AC**Table Top Model****Digital Production Switcher
(CLASSIC COLOR buttons)**

Order your Synergy 1 with the distinctive Ross CLASSIC COLOR buttons on the MLE and keyers – white, yellow, orange, and red/white.

Synergy 1 S1-001AW**Table Top Model****Digital Production Switcher
(ALL WHITE buttons)**

Order your Synergy 1 with the new Ross ALL WHITE buttons on the MLE and keyers.

Synergy 1 S1-002AC**In-Desk Model****Digital Production Switcher
(CLASSIC COLOR buttons)**

Order your Synergy 1 with the distinctive Ross CLASSIC COLOR buttons on the MLE and keyers – white, yellow, orange, and red/white.

Synergy 1 S1-002AW**In-Desk Model****Digital Production Switcher
(ALL WHITE buttons)**

Order your Synergy 1 with the new Ross ALL WHITE buttons on the MLE and keyers.

Please see the section titled **Standard Features** for a full description of the Synergy 1 and its many included features.

System Packages

Ross now offers Synergy 1 Package Deals. These packages bundle some of your favorite options with a standard system and that saves you money!

Each package includes all of the **Standard Features** as well as **four great options**:

- Squeeze & Tease WARP
- Clean Feed
- DSK Border Generator
- Editor Interface

Synergy 1, Package

S1-PKG1AC

Table Top Model

Digital Production Switcher (CLASSIC COLOR buttons)

Order your Synergy 1 Package with the distinctive Ross CLASSIC COLOR buttons on the MLE and keyers – white, yellow, orange, and red/white.

Synergy 1, Package

S1-PKG1AW

Table Top Model

Digital Production Switcher (ALL WHITE buttons)

Order your Synergy 1 Package with the new Ross ALL WHITE buttons on the MLE and keyers.

Synergy 1, Package

S1-PKG2AC

In-Desk Model

Digital Production Switcher (CLASSIC COLOR buttons)

Order your Synergy 1 Package with the distinctive Ross CLASSIC COLOR buttons on the MLE and keyers – white, yellow, orange, and red/white.

Synergy 1, Package

S1-PKG2AW

In-Desk Model

Digital Production Switcher (ALL WHITE buttons)

Order your Synergy 1 Package with the new Ross ALL WHITE buttons on the MLE and keyers.

System Options

Options are typically ordered when the switcher is purchased. However, if you are not 100% certain which options you will need in the future, you don't need to feel pressured into making that decision today. All of our options can be easily installed in the field. You can take comfort in knowing that you can purchase options as your needs develop and that installation at your site will be a smooth process.

Synergy 1, Control Panel S1-003AC

Table Top Model

(CLASSIC COLOR buttons)

Order a Synergy 1 Control Panel with the distinctive Ross CLASSIC COLOR buttons on the MLE and keyers – white, yellow, orange, and red/white.

Synergy 1, Control Panel S1-003AW

Table Top Model

(ALL WHITE buttons)

Order a Synergy 1 Control Panel with the new Ross ALL WHITE buttons on the MLE and keyers.

Synergy 1, Control Panel S1-004AC

In-Desk Model

(CLASSIC COLOR buttons)

Order a Synergy 1 Control Panel with the distinctive Ross CLASSIC COLOR buttons on the MLE and keyers – white, yellow, orange, and red/white.

Synergy 1, Control Panel S1-004AW

In-Desk Model

(ALL WHITE buttons)

Order a Synergy 1 Control Panel with the new Ross ALL WHITE buttons on the MLE and keyers.

USB Removable Media Drive S1-USB

(Factory-Installed)

This USB drive replaces the control panel's floppy disk drive, and supports industry standard USB keys. This option makes it possible to store and recall complete switcher setups including memory functions, switcher personalities, installation parameters, and more, to a USB key. This allows operators and technical staff to back up their switcher setups and easily transfer these settings to other Synergy production switchers.

Note: This option requires version 16 or higher Synergy SD software, and version 5 or higher of the control panel CPU board.

USB Removable Media Drive - Upgrade

S1-USB-UPG

This USB drive replaces the control panel's floppy disk drive, and supports industry standard USB keys. This option makes it possible to store and recall complete switcher setups including memory functions, switcher personalities, installation parameters, and more, to a USB key. This allows operators and technical staff to back up their switcher setups and easily transfer these settings to other Synergy production switchers.

Included in this option are the USB Drive, the cable kit, and a USB Memory Key.

Note: This option requires version 16 or higher Synergy SD software, and version 5 or higher of the control panel CPU board.

Panel Serial Port Expander (Adds 3 RS-422 Ports)

S1-015

This option connects to any one of the control panel serial ports, and provides four serial port outputs, effectively increasing the number of available panel ports by three. This is a "smart" port expander and works with the Synergy 1 control panel to seamlessly manage external device traffic.

Each Panel Serial Port Expander allows up to four different device types to be simultaneously connected and independently controlled by Synergy. Multiple Port Expander units may be connected to a Synergy 1 control panel at one time.

The unit is about 4 inches by 6 inches and is designed to easily mount under the console near the Synergy 4 control panel.

Note: This option requires version 15 or higher Synergy SD software, and version 5 or higher of the control panel CPU board. Also note that you cannot control a 360 Systems DigiCart audio server using this option.

Network Still & Clip Server Option (4 Models)

S1-016-x

This option adds a fully integrated Still and Clip Server to the system. The -x portion of the part number represents the model of the server that you require.

The following models are available:

Option Number	Description of Network Still and Clip Server
S1-016-N	48 hours of clip storage at 12 Mb/s MPEG-2 compression for NTSC standard
S1-016-P	48 hours of clip storage at 12 Mb/s MPEG-2 compression for PAL standard
S1-016-250-N	100 hours of clip storage at 12 Mb/s MPEG-2 compression for NTSC standard

Option Number	Description of Network Still and Clip Server
S1-016-250-P	100 hours of clip storage at 12 Mb/s MPEG-2 compression for PAL standard

The following features are included in all of the above:

- Virtually unlimited still storage, incorporating both key and fill
- Video animation playout with synchronized key and fill
- Animated logo playout with synchronized key and fill
- 2 dedicated playout channels
- 1 record/play channel for live capture and/or additional playout
- Ethernet connectivity allowing drag and drop of stills and clips over a network
- Included Synergy Video Server Control Interface

This option is the result of a collaborative effort between 360 Systems and Ross Video to provide a comprehensive networkable, high storage, clip and still store system solution.

Note that **S1-063: Video Server Control** *is included* with this option and does not need to be purchased separately. Any number of control panel ports are now activated to control this and any other video server that can be controlled using VDCP (Harris/Louth) Protocol.

Unlike other systems on the market, this solution allows totally synchronized key and fill playout of clips, animations, and stills. Add the ability to drop in graphics and animations over a network using simple MPEG or Targa files, and this becomes an extremely practical and attractive package.

\$1 Conversion Frame (DFR-8110A, includes One Power Supply)

S1-023A

Conversion Frame (DFR-8110A-C, as above with Cooling Fan Unit in Door)

S1-023A-C

All switcher inputs and outputs are 10-bit 4:2:2 serial digital including the system reference. Signal sources of other video formats must be converted to serial digital. Ross Video chose to do this conversion externally to ensure that the very latest conversion technology and most competitive pricing is available to our customers. An added bonus of external conversion is the ability to use those converters elsewhere in your facility as you eventually upgrade your switcher sources to serial digital.

Ross Video is known as a world-class and competitive supplier of encoders, decoders, A-Ds, and D-As. In order to encourage you to purchase the entire system from Ross, sets of conversion rack frames and power supplies can be purchased for the nominal price of \$1 US each (cooling fan unit extra) according to the following conditions:

- The order for conversion frames is made at the same time as the order for the switcher.
- The number of frames covered is equal to the number of converters ordered, divided by 10, with all fractions rounded up (i.e., 1 converter = 1 frame, 9 converters = 1 frame, 15 converters = 2 frames, etc.).

- Ross products that qualify as converters are as follows:

Converter	Description
ADC-8032B	Analog Composite to SDI Digital Decoder
ADC-8032B-S	Analog Composite to SDI Digital Decoder with Frame Synchronizer
ADC-8033	Analog Component to SDI Converter
ADC-8035	Dual Analog Composite to SDI Converter
CMA-8011A	SDI Component Monitoring Amplifier
CMA-8011A-7	SDI Component Monitoring Amplifier with 7 reclocked SDI Outputs
DAC-8013	SDI to Analog Component Converter
DAC-8016A	SDI to Analog Composite Converter
DAC-8016A-S	SDI to Analog Composite Converter with Frame Synchronizer
DAC-8016A-SX	SDI to Analog Composite Converter with Frame Synchronizer and X-Color Filter
DAC-8016A-X	SDI to Analog Composite Converter with X-Color Filter
QMA-8044	Quad SDI to Analog Composite Monitoring Amplifier
UMA-8017	Universal SDI Monitoring Amplifier

If your system requires power redundancy don't forget to order an additional power supply per conversion rack frame (PS-8102). These additional power supplies are not included in the \$1 offer. Please obtain a current Ross Video Catalog for detailed information on Ross Video's complete line of converters. You may also want to consult with Ross Video or check out our web site at www.rossvideo.com to determine if new converters have been added to our product line since the catalog was released.

Note

Ross Video also offers the GearLite™ line of converters. Contact your Ross representative or visit our website to determine the best solution for your needs.

Downstream Keyer (1st DSK) – Card Only

S1-501

This option adds a downstream keyer to the standard internal keys, and requires the purchase of a 2-rack unit S1-023A-C: Conversion Frame and single power supply. (For redundant power purchase a PS-8102 power supply).

Note that this downstream keyer has access to every Synergy video source, and also has internal storage for bugs and animated logos.

Downstream Keyer (2nd DSK) – Card Only

S1-502

This option adds a second downstream keyer to the rack frame purchased with the **S1-501: Downstream Keyer (1st DSK)** option above.

Note that this downstream keyer has access to every Synergy video source, and also has internal storage for bugs and animated logos.

Dual Channel Aspectizer[®]

S1-027

The Dual Channel Aspectizer allows the user to perform live, dual aspect ratio, DTV production *inside* a Synergy system. Each Aspectizer can be configured in one of three modes; Input Mode, to convert the aspect ratio of 2 separate channels (sources) of video; Bus Mode, to convert the aspect ratio of all of the inputs on a BKGD/PST bus-pair of the MLE, and Downstream Mode, to provide a second switcher output with a different aspect ratio for delivery to two transmission towers – one 4:3 and the other 16:9.

The Aspectizer provides the following features:

- full 10-bit processing with broadcast quality horizontal and vertical interpolation,
- conversion of 4:3 aspect ratio images to 16:9 aspect ratio images using the following methods:
 - Pillar box
 - 14:9
 - 14:9 wide
 - Vertical “Pan-and-Scan”
- conversion of 16:9 aspect ratio images to 4:3 aspect ratio images using the following methods:
 - Letter box
 - 14:9
 - 14:9 tall
 - Horizontal “Pan-and-Scan”

Six of the Aspectizer looks can be repositioned on screen, either vertically or horizontally depending on the look, to give you more real estate for additional flexibility.

The whole issue of dual aspect ratio production can be quite complex, especially considering the great number of format names currently being used. If you are unsure on any issue, please contact your Ross Video representative who will be pleased to review your production requirements and assist you in configuring your system. We also have additional literature available on the topic.

In general, the Aspectizer supports the 525, 625, 270Mb/s anamorphic 16:9, 270Mb/s 14:9, 480i formats, several of which mean the same thing.

Ultimatte Insider[™] Matting Device

S1-028

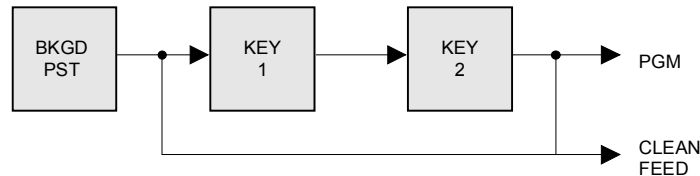
The Synergy 1 comes standard with 2 quality chroma keyers on Key 1 and Key 2. For super critical keying applications, the Ultimatte Insider Matting Device is available. The Ultimatte Insider is manufactured by Ultimatte Corporation and integrated within the Synergy 1 by Ross.

Clean Feed

S1-031

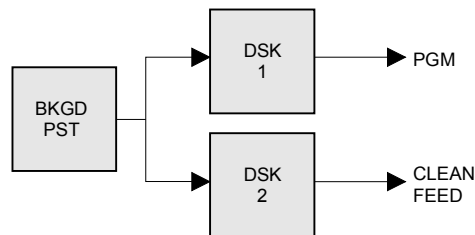
This feature is used for bilingual and live-to-tape productions. It provides a second “program” output that is derived from a different location than the standard program output. A frequent application is the recording of shows for later airing without “call in” phone numbers inserted.

The clean feed can come from before or after the keyers in the MLE. This provides two of the four possible clean feed configurations (see figure below).



Clean Feed Modes

For bilingual applications a special “dual output mode” is also provided. This provides KEY1 over the PGM/PST bus on the normal program output and KEY2 over the PGM/PST bus on the “clean feed” output. The DSKs can be switched independently or configured so that transitions performed on one keyer automatically follow on the other keyer. This allows French/English, English/Spanish, etc. simultaneous broadcasts from a single switcher. This provides the remaining two of the four possible clean feed configurations (see figure on the following page).



Clean Feed Dual Output Mode

Squeeze & Tease® 2D

S1-140

The Squeeze & Tease 2D option puts the power of a simple 2D DVE into both Key 1 and Key 2 and the transition area of the Synergy 1. Squeeze & Tease (either 2D or 3D WARP) is an extremely popular option that is sold with almost every Ross digital switcher.

The Squeeze & Tease 2D option can do the following effects using only one keyer:

- squeeze, crop, and reposition an image with a variable-sized colored border;
- squeeze, crop, and reposition a self key;
- squeeze, crop, and reposition a chroma key;
- squeeze, crop, and reposition an auto select key (note: this function “steals” the other keyer’s S&T to process the alpha signal. The other keyer is otherwise unaffected);

- push on and push off any type of key as a transition (choose from 40 different push types).

Either full screen video or keys can be frozen at the touch of a button. This puts the power of a frame store into every keyer. If full screen video is frozen, it can be used as a background to the other keyer in the MLE. Alternatively, a character generator key can be frozen to free up your character generator for further key generation.

The Squeeze & Tease 2D is very easy to control and most effects can be produced simply by pressing the Fly Key button and then using the 3-axis joystick. Further tweaks can be made through the menu system.

All Squeeze & Tease 2D effects can be subsequently bordered using the keyer's optional border generator.

Squeeze & Tease 2D wipes also become activated when you buy this option. These are built in DVE effects that can transition backgrounds or keys. If a key is already being modified by Squeeze & Tease 2D, the transition effect is added "on top" for the duration of the transition. Squeeze & Tease 2D transitions are selected by pressing the WIPE and DVE SEND transition buttons at the same time. The pattern area acts as a "shot box" where you can select at least 40 types of effects such as push, squeeze, tumble, and swoop.

Squeeze & Tease® WARP

S1-142A



Squeeze & Tease WARP is the latest in built-in switcher digital effects from Ross Video. S&T WARP puts a fully loaded 3D DVE with curvilinear effects into both keyers and the transition area of an MLE. The picture quality is simply stunning and we think you'll agree that this is our best Squeeze & Tease DVE yet! This is a "MUST HAVE" option!

Squeeze & Tease is an extremely popular option that is sold with almost every Ross digital switcher. The Synergy 1 can be ordered with one Squeeze & Tease WARP options - putting a DVE into the two MLE keyers. This incorporates the power of two DVEs into the switcher.

Fly ANY kind of key! Pressing the FLY KEY button easily activates Squeeze & Tease WARP allowing you to transform self keys, linear keys, and chroma keys. You are automatically taken into a comprehensive and intuitive user menu, where you can set up your desired effects. If you prefer, the 3-axis joystick can also be used to adjust your key's parameters.

Still Stores and Frame Stores

The on board, dual channel, 32MB (30 – 512 frames, dependant upon image size) still store allows you to capture graphics or stills and have them available in S&T at a moment's notice. All images load in 1/15 of a second or less! The on-board still store allows you to quickly grab a full frame or just a small region like a CG "lower third" or a "bug", extending your storage capability. All images are stored as frames but can be displayed in field mode if the capture involves a moving object. Up to 2 channels of still store are available on a Synergy 1.

When capturing images, you can also hold 2 images in the quick and simple frame store, OR you can name them and store them into non-volatile “flash” memory to be used again and again.

Preprocessor Effects

Preprocessor effects include wide range defocus with separate H and V controls, mosaic, posterization, colorization, and a strobe effect that allows you to vary the number of on and off frames to provide enhanced creative possibilities. All preprocessor effects are available simultaneously and can be combined in any combination.

Planar Transforms with Lighting

Squeeze & Tease WARP has dedicated circuitry incorporating 10-bit processing, superb filtering, and full sub-pixel resolution to manipulate 2D images in 3D space with crystal clear quality.

Planar transforms include squeeze or zoom, crop, reposition, aspect, and rotate. These effects can be applied to images and keys.

All images and keys can also have realistic natural lighting applied to them. Squeeze & Tease WARP makes it easy with “quick presets”, a positionable light source, and powerful ambient and min/max lighting controls.

Advanced Picture Frame Generator

Squeeze & Tease WARP can add a picture frame to border over-the-shoulder boxes. This variable width border perfectly tracks all image resizing and special effects. The picture frame generator instantly adds a polished, professional look to your squeeze backs.

This picture frame can be the simple, single color type, or one of many fancy picture frame effects including roman column, tubular, beveled, computer style, tri-color, and more. These picture frame effects have the following adjustable controls:

- hard or variable edge softness
- edge width/scaling
- inside/outside edge softness symmetry
- diagonal, horizontal, and vertical corner joint selection
- full control of all three picture frame color generators.

An additional transparent shadow effect can be added behind all Squeeze & Tease WARP effects using the Dual Border Generator option. This is an ideal tool to work in conjunction with the picture frame generator built into Squeeze & Tease.

Advanced Planar Controls

The following advanced controls make building the ideal look for your show just that much easier:

- **Front Side/Back Side** in one channel and one keyer. When you look at the backside of an effect, you can have it automatically select a different video signal on the key bus. This makes it possible, for example, to rotate between 2 channels of still store in an over-the-shoulder box in a single keyer, using only 1 channel of S&T WARP.

- **Auto Flip.** When you rotate an image in normal mode, the backside appears upside down or mirrored. Turning on Auto Flip ensures that the front side of an image is always presented. This is great for the manipulation of still store and CG text.
- **Internal Key Combiner.** Two squeeze backs can be combined and displayed in a single keyer. This effectively adds yet another keyer to the Synergy MLE.
- **Key Combiner Priority Control.** Getting the channels the way you want them is easy with S&T WARP. When two squeeze backs are combined in a single keyer, you can choose channel one on top, channel two on top, auto-priority, or intersecting planes. Auto-priority automatically puts the correct channel on top based on their relative positions in 3D space. With the intersecting planes choice, one channel will literally cut into another channel hiding the portion that is hidden behind it.
- **Easy Slabs and Objects.** Squeeze & Tease WARP provides a simple and intuitive user interface to combine two planes into a slab and then manipulate it as a single object. S&T WARP deals with the math and you get a great looking slab the way you want it within seconds.

Warp Effects

Warp effects include page turn, ripple, wave, mirror, swirl, melt, twist, slats, splits, spheres, lenses, star, heart, old film, shards, corner pinning, lens flare, and many more.

Creative possibilities are endless as S&T WARP effects can be easily combined with preprocessor, planar transformation, lighting, and picture frame effects!

All of the S&T WARP effects are user modifiable to help you get just the look you want.

Pre-Built Effects, User-Built Timelines, and Key Sequences

Squeeze & Tease WARP wipes are selected in a single action by pressing the WIPE and DVE SEND button (or DISS, WIPE, and DVE SEND for a key sequence) in the transition area. Up to 100 wipes can be stored in the system at any time. The pattern area acts as a “shot box”, where you can select from 40 of these 100 pre-built planar and warp transitions. The other 60 transitions can be loaded from the keypad.

These 100 transitions can be loaded from a floppy disk (supplied by Ross) containing 80 pre-programmed transitions and effects. Other wipes and transitions will be available by download from our web site. You can then modify these or you can create your own! Either backgrounds or keys can be transitioned and, if a key is already being manipulated by Squeeze & Tease WARP, the transition effect is added “on top” for the duration of the transition. You can even create sequences that transform a key in a keyer under manual fader control!

Dual Border Generator

S1-141

This option provides dynamic border, shadow, and outline effects to both linear keyers in the MLE with either hard or “glowing” edges. You can then move the border to any position on the screen - even above the key. Borders are “flown” in real time with the joystick in the same manner as wipe patterns and DVE effects. This border generator was designed as a creative tool and it can add an impressive visual impact to your keys.

All border edge effects can be modified through the parameters of x and y position, border size, border color (including color washes), density, and glow (giving a soft defocused look).

The border generator can enhance any kind of switcher key including self keys, linear keys, chroma keys, and preset pattern keys. In Synergy, borders are particularly effective for enhancing Squeeze & Tease over-the-shoulder boxes making them appear to “float” over their backgrounds.

Timed Aux Bus

S1-051

(for Aux Buses 1 and 2)

The Synergy 1 includes 10 untimed Aux Buses as a standard feature. Two of these buses (Aux 1 and 2) may be timed with the addition of an S1-051 timing module on each bus.

Untimed Aux Buses will follow the timing of the input sources or re-entries with a short additional processing delay, whereas timed Aux Buses will ensure that all “synchronous” sources will have stable timing relative to the switcher’s program output. This greatly simplifies D-A conversion and system timing design. A “synchronous” source is defined as one within +/- one-third line of the switcher reference. Sources outside of this timing window will remain horizontally locked but may be shifted vertically.

Dedicated Remote Aux Panel

S1-052

(includes 10 meter cable)

The Synergy 1 main control panel provides built in control for the first 2 Aux Buses (this row of buttons is also shared with the key 1 and 2 buses). The other 8 buses are controlled via one additional key press in the menu system. When control of any single Aux Bus is needed either for permanent direct access or for a remote location, a dedicated remote Aux panel is required.

A remote panel is a self-contained unit that has its own power supply. It is designed to be mounted in a 19-inch rack and fills 1 RU. Pushbuttons on the remote panel allow direct access to 16 source buttons, the MLE program and preview outputs, clean feed and DVE Send (Aux 1 and 2 when timed). The remote panel is connected to the switcher’s rack frame panel via a single six conductor Telco control cable. It can also loop through another remote panel. See the **Specifications** section at the back of this guide for a picture of a dedicated remote Aux panel.

Assignable Remote Aux Panel

S1-053

(includes 10 meter cable)

The Synergy 1 main control panel provides built in control for the first 2 Aux Buses (this row of buttons is also shared with the key 1 and 2 buses). When control of multiple Aux Buses is needed either for permanent direct access or for a remote location, an assignable remote Aux panel is required.

A remote panel is a self-contained unit that has its own power supply. It is designed to be mounted in a 19-inch rack and fills 1 RU. Pushbuttons on the remote panel allow direct access to 16 source buttons, the MLE program and preview outputs, clean feed and DVE

Send (Aux 1 and 2 when timed). The remote panel is connected to the switcher's rack frame panel via a single six conductor Telco control cable. It can also loop through another remote panel. This assignable control panel offers access to Aux Buses 1 through 4, 5 through 8, or 9 and 10. Buttons on the remote Aux panel determine which group of the switcher's Aux Buses is currently being selected. See the **Specifications** section at the back of this guide for a picture of an assignable remote Aux panel.

Custom Cable for Aux Panel (sold by the meter)

S1-054-xxx

Remote Aux panels come standard with a 10-meter control cable. If lengths of other than 10 meters are needed, this option is required. The -xxx portion of the part number represents the total cable length in meters.

For example: 2 seven-meter cables and one 20-meter cable are required. Order:

- quantity 2 of S1-054-007, and
- quantity 1 of S1-054-020.

Editor Interface

S1-060

It is common to use an editor to control a video production switcher. With the editor interface option, the Synergy 1 can interface to all popular editing systems. The MLE can be controlled using an RS-232 or RS-422 interface and industry-standard GVG 100 or GVG 4000 editor protocol. The editor can be used to read and write switcher functions including video input selection, pushbutton enable and disable, control settings, and memory registers. If complete control of all switcher parameters from an editor or remote device is necessary, this option is required.

Note that GPI triggers come standard with the Synergy 1 and can be assigned to press any cut or auto transition button on the control panel.

VTR Remote Control

S1-061

This option makes it possible to control multiple VTRs, disk recorders, video servers, or other devices that use the near-universal Sony Betacam protocol - directly from the switcher panel. The Synergy 1's transition area has a ROLL VTR button. When that button is pressed, a play command is sent to the device selected on the preset bus. Once the preroll time is over, the operator takes the source to air - with precise timing guaranteed. The ROLL VTR button can also be assigned to "arm" the cut and auto transition buttons. In this mode, pressing the cut and auto buttons will roll the VTR on preset, wait the preroll time associated with that device, and then proceed with the transition.

The VTR CLIP button in the Global Memory System area is used to cue up the next VTR. Each clip memory has an associated device (e.g., VTR RED) and a stored time code. Frequently used video clips can be accessed over and over at the touch of a button.

VTR Remote Control can also be tied into the Custom Control buttons. Any Custom Control button can be attached to functions such as cue to time code, play, stop, rewind, fast forward, frame advance, gang roll, and more.

DVE Send and Remote Control

S1-062

The Synergy series of switchers was designed to work with most popular brands of DVEs seamlessly as if they were part of the switcher during on air production. The DVE Send and Remote Control option makes this possible.

To perform a DVE Send transition, select the next transition (BKGD, BKGD and key, or key), the DVE SEND transition type (as opposed to wipe or dissolve), and press the auto transition button. Transitions do not consume a keyer, as there is a third hidden keyer in each MLE just for DVE re-entries. The switcher also handles all Aux Bus and signal routing issues automatically.

Depending upon the capabilities of the DVE, transitions can also be run manually with the fader bar.

DVE effects can be recalled directly using the INCL DVE button in the Global Memory System. To top it off, your tallies will always be correct - regardless of the complexity of the video signal routing.

Video Server Control

S1-063

This is a very powerful interface. It allows control over multiple channels of Video Server using the VDCP (Louth) Protocol. Clip name and duration are displayed in the Synergy System Control Area. The Video Server interface can be used to cue and roll clips that are used during a live production. This is ideal for commonly used clips such as opening animations and animated backgrounds that are used again and again.

While setting up a clip for later recall, Synergy can download up to 1000 clip ID's from the server and then sort them alphanumerically. The user then easily chooses the clip for later recall. The server clips can also be chosen directly by name. Once chosen, in points and out points can be added to the clip on Synergy without affecting the original clip on the server. This is done while moving through the video in real time. A constantly updated bar graph summarizes the process. The current time code is also displayed on the preview overlay. Finally, the clip can be given a unique name on Synergy to simplify later recall.

During a live production, clips from any device can be cued directly from the Global Memory keypad. Clips for a particular server channel can be accessed by selecting the channel on a preset bus and then choosing from a list of named Synergy clips. The dedicated menu for that server channel also provides controls for cue, play, stop, fast forward, and rewind.

Audio Server Control (5 Channels)

S1-064

The Audio Server Control option enables control for up to five 360 Systems DigiCart™ Audio Servers. This interface uses the DigiCart native protocol and allows the Synergy operator to dial up hard drive, directory and clip number.

The clip name and duration is displayed on the Synergy System Control Area. Clips can be saved into a clip list and recalled instantly with VTR and Video Server Clips. Using

Custom Control Macros, audio clips can be tied to video effects for the whoosh on page turn and other effect types.

Note: You cannot control a 360 Systems DigiCart Audio Server using the Remote Serial Port Expander.

Routing Switcher Interface

S1-065

This option adds routing switcher interface capability to your Synergy digital production switcher.

Any number of Synergy's 16 inputs can be assigned as a router input. When you select a source fed by a router on the program or preset bus, the router control menu automatically appears. The router menu shows Synergy's name for the source (e.g., ROUTER1) and the router's name for the source (e.g., VTR12). The router menu also displays every source available on that router by name and by router input number. The menu knobs allow for fast access to every available source. A single button push automatically assigns the chosen source to Synergy.

The Preview Overlay also comes into play with routers. When the Source ID display is active on the preview monitor, router sources selected on the background or preset buses are given extra identification. In the example above, Synergy would display both the name ROUTER 1 and VTR 12 to give the full picture of the source's origins.

Synergy 1 can connect to up to five different routers, and even five different brands of routers, simultaneously. All of the following router protocols become available with the purchase of this option, and are selectable via the switcher menu system:

- Ross Routing Systems
- Pesa
- Pro-Bel
- Utah Scientific
- Quartz
- Philips

If your router is not on the above list, please contact your Ross sales representative as new routers are being added all the time.

Serial Tally Interface

S1-066

This enables Serial Tally Interface using industry standard protocols to Under Monitor Display and Tally Systems. The standard parallel tally interface will continue to operate normally when this option is enabled.

Peripheral Bus II Interface

S1-067

This enables support for Thomson GVG Peripheral Bus II Protocol for external device integration. Devices that support this protocol (such as some still stores, CGs, and device controllers) will be directed to store their settings when Synergy stores its settings and then do a coordinated recall when Synergy performs a recall.

Still Store (Aprisa) Interface

S1-068

This enables serial ports for control over the Chyron Aprisa Still & Clipstore. It allows a user to randomly access any still or clip under control from Synergy. Custom Control macros can also be created for quick and direct access to clips and switcher scene recalls.

Audio Mixer Ganging

S1-0610-G

This option provides the protocol converters required to control a pair of cascaded Yamaha Audio Mixers simultaneously. Either the Small Audio Mixer Interface or the Large Audio Mixer Interface options must also be purchased.

Included in this option are the MIDIator Systems MS-124W converter box and the Midi Merger unit.

Small Audio Mixer Interface (16 and fewer Inputs)

S1-0611

This enables serial control for enhanced audio follow video from Synergy over small audio mixers, making an integrated A/V production possible.

This protocol supports the associating of any audio input with any video input. It also supports easy audio voice-over control and audio level control from the Synergy panel.

Call for the list of currently supported mixers.

Large Audio Mixer Interface (more than 16 Inputs)

S1-0612

This enables serial control for enhanced audio follow video from Synergy over large audio mixers, making an integrated A/V production possible.

This protocol supports the associating of any audio input with any video input. It also supports easy audio voice-over control and audio level control from the Synergy panel.

Call for the list of currently supported mixers.

Robotic Camera System Interface

S1-0613

This enables serial control over robotic camera systems including pan, tilt, zoom, focus, and scene recalls.

Call for the list of currently supported robotic camera systems.

Character Generator Interface

S1-0614

This option allows you to control your CG directly from the Synergy control panel. Using the keyboard attached to the switcher you can load pages, view the text on the control panel display, and even change the text directly on the CG. Fixing typos has never been easier! As well, you can load and view play lists, move pages within play lists, and set up custom control macros to instantly load frequently used CG pages such as “Breaking News”, “Coming Up At Six”, or talent names.

Custom Cable for Main Panel **(sold by the meter)**

S1-075-xxx

This cable connects the control panel to the electronics rack frame. It is a shielded 8-pin Telco cable and the ends are finished with the appropriate connectors. The control panel and rack frame can be separated by a maximum of 300 meters.

The switcher comes standard with a 10-meter control panel cable. If lengths of other than 10 meters are needed, this option is required. The -xxx portion of the part number represents the total cable length in meters.

For example: a 50-meter control panel cable is required. Order:

- quantity 1 of S1-075-050.

Redundant Power (Panel)

S1-076

The panel redundant power supply mounts directly inside the Synergy 1 control panel. This option provides protection against AC power failure or failure of one of the control panel power supplies. It allows the control panel to receive power from two independent power sources and provides a seamless fail-over to the redundant supply.

There are two power fail indicator lights on the main panel. They indicate the following:

- loss of power or fan fail in the rack frame,
- loss of redundant power in the control panel.

In the rack frame, there are lights visible from the front of the unit that indicate the following:

- All okay
- Cooling fan failure
- Power supply failure

On the rear of the rack frame, there are lights visible that indicate the following:

- -12 okay
- +5 okay
- +10 okay
- +15 okay

Spare Power Supply Rack Frame

S1-077

This provides a spare “quick swap” power supply for the Synergy 1 rack frame. The Synergy 1 rack frame power supply plugs into the rack frame from the front and slides into connectors on the Motherboard. It can be easily changed in a few seconds.

Rack Frame Tallies

S1-079

This option provides 16 tally relays in the Synergy 1 rack frame. Tally connections are located on the rear of the rack frame. These connections provide a contact closure and are fully assignable - any tally can be assigned to any video input.

Spare Parts Kit

S1-073

It would be far too expensive to put every switcher part in the Spare Parts Kit. Parts were chosen for the kit using the following criteria:

- The part comes into frequent contact with the user.
- The part can be easily damaged or may wear out with excessive use.
- The part can be damaged by connecting excessive voltage to an external connector.
- The part is used in system power management.
- The part can be lost easily.

ICs that fall outside of the above criteria are not included.

An exception to the above criteria is rack frame and control panel power supplies. These are expensive parts and spares are ordered separately.

Additional Maintenance Guide S1-080

This manual provides information regarding the maintenance of the Synergy 1 control panel and chassis. It also includes the procedures for installing various options.

Additional Operation Guide S1-081

This manual contains all of the information required to run the switcher on a day-to-day basis.

Additional Installation Guide S1-082

This manual contains instructions on how to install the switcher into a facility. It explains how to connect external devices to the switcher.

Synergy Onsite Operational Training S1-090 - 1ST Day

Training courses can be conducted at the customer's site or at Ross facilities. Expenses are included in North America. A minimum of four weeks advance notice is required for training to ensure we can efficiently schedule the best possible training staff for your requirements. Onsite training is provided on customer's switcher.

Customers are not charged for the travel time of the trainer.

Synergy Onsite Operational Training S1-091 - Additional Day

One full day of training on the Synergy 1 will meet most customer needs. Additional time may be required to handle multiple training groups or if the operators have never used a production switcher before.

Synergy Onsite Technical Training S1-092 - Two Days

With Synergy onsite technical training, the customer's technical staff is introduced to the following:

- Basic operation
- Switcher installation and configuration
- Peripheral interfacing
- Video signal flow
- System timing requirements

- Circuit block diagrams
- Circuit board overviews
- Jumpers and indicators
- Troubleshooting tips
- Software upgrading
- Routine maintenance

Synergy Onsite Commissioning

S1-093

- Two Days

Synergy Onsite Commissioning is a great way to ensure that your Synergy is properly installed into your facility and tuned to maximum performance.

Once the customer has installed and cabled the equipment, a Ross Commissioning expert will come on site to get the switcher configured, verify that all peripheral interfaces are operating properly, provide a basic technical orientation, and help you get on the air.

Please note that commissioning does not replace operator or technical training. Contact your Ross representative to discuss which types of assistance are best suited to your needs.

Synergy 1 Extended Warranty

S1-999

(adds one year)

This extends the standard three-year warranty by one year.

Technical Support

At Ross, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24 Hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross personnel. During business hours (eastern standard time), technical support personnel are available by telephone any time. After hours and on weekends, emergency technical support is available through the main Ross Video phone number. A message is left in the technical support voicemail box, which will page technical support personnel who are on call and will return the call shortly. These people are available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

Repair and Warranty Policy

The Synergy Series is backed by a comprehensive three-year warranty on all components. Synergy fader handles are covered with a lifetime warranty. For a more detailed description, please see our warranty document.

Specifications

Physical Characteristics

Control Panel

Width	28.75" (73.0 cm)
Height	9.5" (24.1 cm)
Depth	17.375" (44.1 cm)
Height above desktop	7" (17.8 cm)
Primary pushbuttons	16

Desk Cutout Size

Width	28" (71.1 cm)
Depth	17.625" (44.8 cm)

Rack Frame

Width	19" (48.3 cm)
Height (2 RUs)	3 1/2" (8.89 cm)
Depth	16" (40.64 cm)

Rack Frame Connector Types

Video	BNC Type
Editor	D type, 9 pin
Peripheral 1 & 2	D type, 9 pin
Peripheral 1A & 2A	BNC Type
DVE	D type, 9 pin
GPI I/O	D type, 25 pin
To control panel	8 pin shielded Telco D type, 15 pin (not used) 50 pin Centronics (not used)
Aux panel	6 pin, shielded Telco
Tally 1 & 2	12 pin detachable terminal block
AC power	3 pin IEC

Control Panel Connector Types

Remote 1 through 5	D type, 9 pin
Aux	6 pin shielded Telco
Tally out	D type, 25 pin
To rack frame	8 pin shielded Telco
AC power 1 & 2	3 pin IEC

Power Consumption

Input voltage	90V~250V AC, 47~63Hz
Control panel	100 VA
Frame (with all options)	75 VA

Environmental Characteristics

Panel and rack frame separation	1000 ft (305 m) max
Ambient temperature range	0 – 40 degrees C

- The video processing circuitry is cooled by one fan located at the rear of the unit. The power supply is a quick swappable plug-in type.
- The control panel is convection cooled (no fans) for silent operation.

Video Characteristics

Video Processing

- 10 bit 4:2:2 component digital video and key processing
- 256 levels of key transparency
- 525/625 line support, auto detect
- 4:3 and anamorphic 16:9 switchable aspect ratio

Video Inputs

Number of inputs	16
Serial digital reference input (601)	1
Equalization	> 150 m
Impedance	75 ohm, terminating
Return loss	> 20 dB

- All inputs are SMPTE-259M-C serial digital non-looping.
- Inputs can be used for either key or video.

Video Outputs

Number of Outputs:

Program	2 each
Preview	2 each
Clean Feed	1
Aux Bus (1 to 10)	1 per bus

Output Characteristics:

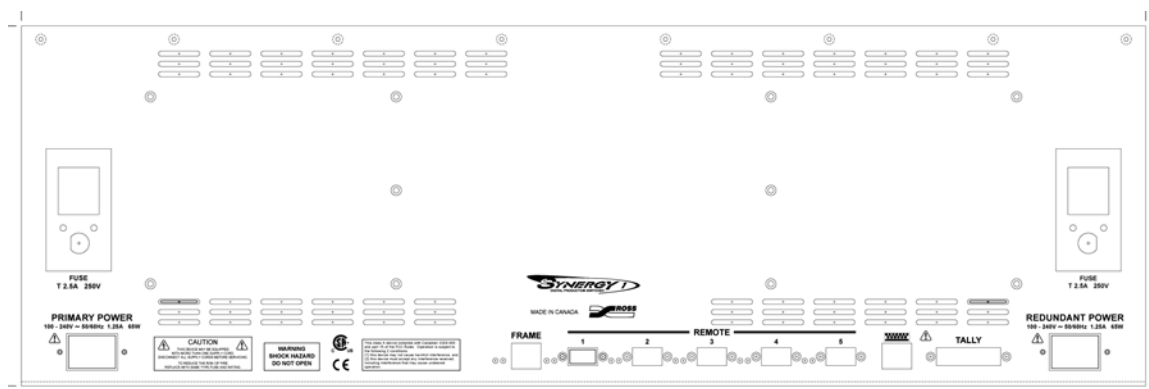
Return loss	> 18 dB @ 270 MHz
Rise time	800 ps +/- 10%
Signal level	800 mV +/- 10%
DC offset	0 volts
Rise and fall time	1 ns (20 – 80%)
Overshoot	< 8%

- All video outputs are 10-bit SMPTE-259M-C serial digital.

System Timing

- All video inputs zero time relative to reference input, auto timing will correct for inputs out of time by up to +/- 1/3 line.
- The delay through the switcher is less than one tenth of a line (approx. 6.3us). This delay can be manually increased in 37ns steps to a maximum of 32us in order to accommodate late video signals.

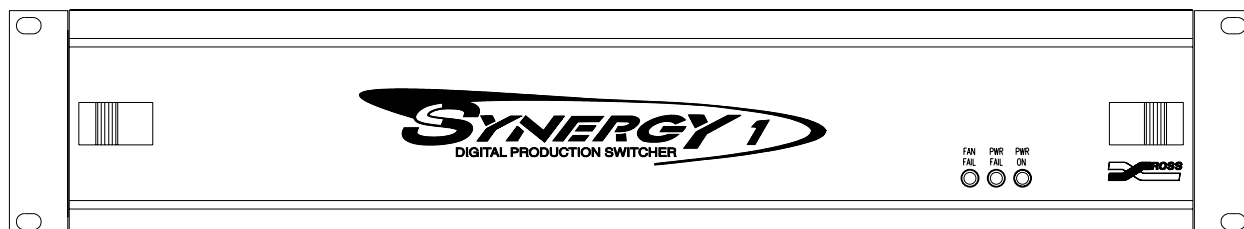
Note: Specifications are subject to change without notice.



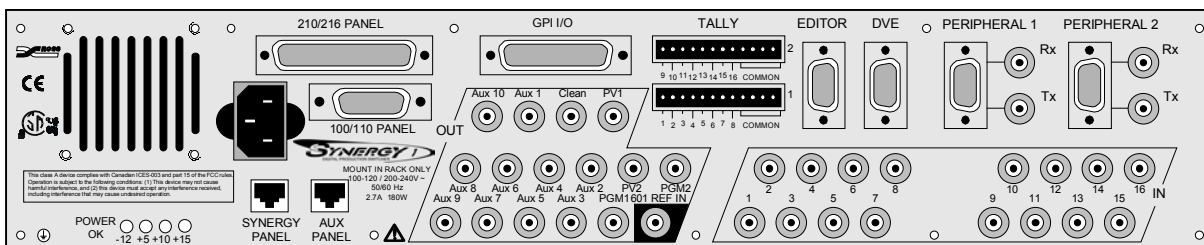
Synergy 1 Control Panel - Rear View



Synergy 1 Control Panel – Right Rear View – Connector Close-Up

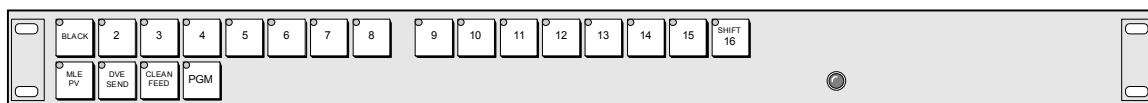


Synergy 1 Rack Frame Front View

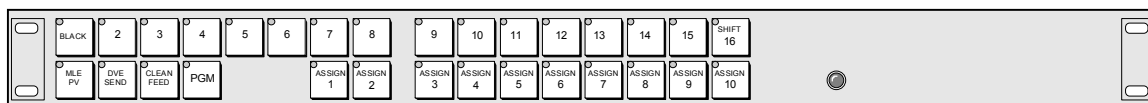


Synergy 1 Rack Frame Rear View

Note: Synergy switchers meet applicable world standards for safety, emissions, and immunity.



Synergy 1 Dedicated Remote Aux Panel



Synergy 1 Assignable Remote Aux Panel

**REQUEST FOR QUOTE**

PAGE _ OF _

CUSTOMER INFORMATION

Company _____

Contact Name _____

E-mail _____

Telephone (s) _____

Address _____

Item #	Option Number	Option Name	Quantity Required

FAX TO: Ross Video Limited, P.O. Box 220, 8 John St., Iroquois, ON., Canada K0E 1K0
Fax. (613) 652-4425